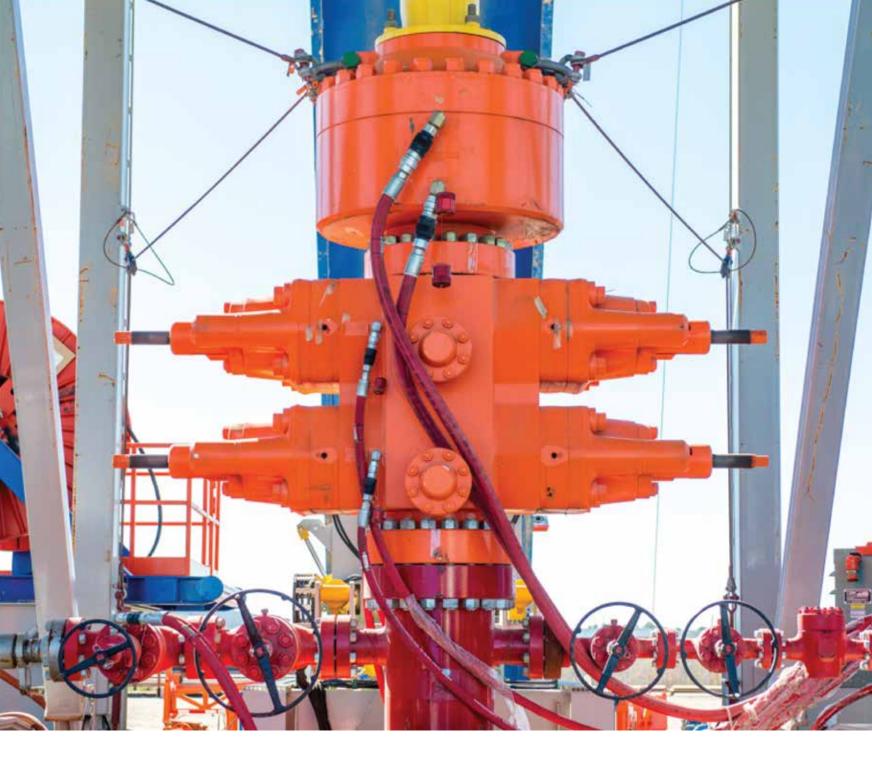


Drilling Courses Overview

Pressure control and drilling equipment course offering

Content

| Introduction | 3 |
|----------------------------------------------------------|----|
| Pressure control equipment | |
| Multiplex (MUX) control system overview | 4 |
| Mark III subsea BOP control system — electrical | |
| Mark III subsea BOP control system — hydraulic | 5 |
| Mark III subsea BOP control system — multi discipline | |
| Mark I & II subsea BOP control system — electrical | |
| Mark I & II subsea BOP control system — hydraulic | |
| Mark I & II subsea BOP control system — multi discipline | |
| Land pressure control equipment | |
| Jack-up pressure control equipment | |
| Direct hydraulic BOP control system | 8 |
| Cameron BOP stacks | 9 |
| U ram-type BOP — mechanical | 10 |
| Townsend onshore BOP — mechanical | 10 |
| Choke & Kill Manifolds — mechanical | |
| LoadKing riser system | |
| Integrated MPD system | 12 |
| Rig equipment | |
| Operator course | 14 |
| Simulator course | |
| Basic OnTrack PLC | 15 |
| Advanced OnTrack PLC | |
| Electro technical | 16 |
| Hyd/Mech maintenance | 16 |
| JiM 10 advanced practical troubleshooting | |
| Advanced electro - technician practical | |
| Advanced hyd/mech - technician practical | |
| On-site practical course | |
| Basic Servicelab | |
| eLearning Solutions | 19 |
| DirectDrive TD 750 top drives | 20 |
| LDW gear driven drawworks | |
| LDW chain driven drawworks | |
| Mud pumps | |
| Digital drilling control system | |
| LRT rotary tables | 23 |



Introduction

We recognize that each person learns by a different style and technique. Our teaching model promotes a blended learning setting for students to absorb knowledge in an intuitive manner through interactive lectures, animated presentations, and practical hands-on exercises. Our focus is to prepare the participants to effectively operate, maintain, and troubleshoot the Cameron product lines.

Prerequisites

A basic understanding of the oil & gas industry should be acquired before course attendance. We recommend an intermediate level of hydraulic and/or electrical theory knowledge to take full advantage of the Drilling Systems Training learning experience.

Organization

These instructor led courses encourage student interaction and feature short quizzes throughout each course to promote discussion points. Instructors are available at the beginning and end class to answer questions and/or review information. The comprehensive final exam requires a score of 70% to receive a certificate of completion.

Registration

For course bookings and inquiries, contact drilling training @slb.com.

PRESSURE CONTROL EQUIPMENT

Multiplex (MUX) Control System Overview

One-day course description

Overview

This course provides an overview of the Cameron multiplex (MUX) control system and the electrical, hydraulic, and communication pieces of the control system.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. drillers, assistant drillers, tool-pushers, andassistant tool-pushers)

COURSE OUTLINE

- Welcome
- Drilling overview
- Controls overview
- Software

Mark III Subsea BOP Control System — Electrical

Five-day course description

Overview

This course covers the Mark III subsea BOP control system, discussing how the control system functions and communicates from an electrical perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians and subsea engineers).

- Pretest and welcome
- Drilling overview
- Mark III subsea BOP control system software
- Documentation
- Electrical symbols
- Detailed power flow
- Detailed signal
- Fluid flow overview

- Pressure balanced oil filled (PBOF) cables
- Subsea electronics module (SEM)
- Pressure transducer module and solenoid valve module (SVM)
- Riser control box (RCB)
- Surface electrical systems
- Emergency control systems
- Post-test and evaluations

Mark III Subsea BOP Control System — Hydraulic

Five-day course description

Overview

This course covers the Mark III subsea BOP control system, discussing how the control system functions and communicates from a hydraulic perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic technicians and subsea engineers).

COURSE OUTLINE

- Pretest and welcome
- Drilling overview
- Mark III subsea BOP control system software
- Documentation
- Hydraulic symbols
- Valves and regulators

- Fluid flow overview
- Power and signal overview
- Surface hydraulic equipment
- Subsea equipment
- Preventative maintenance
- Emergency control systems
- Post-test and evaluations

Mark III Subsea BOP Control System — Multi-Discipline

Five-day course description

Overview

This course covers the Mark III subsea BOP control system, discussing how the control system functions and communicates from both an electrical and hydraulic perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic technicians, electrical technicians, and subsea engineers).

- Pretest and welcome
- Drilling overview
- Mark III subsea BOP control system software
- Documentation
- Valves and regulators
- Fluid flow overview

- Electrical symbols
- Power distribution
- Systems & communications
- Subsea electronics module (SEM)
- Surface & subsea hydraulic equipment
- Emergency systems
- Post-test and evaluations

Mark I and II Subsea BOP Control System — Electrical

Five-day course description

Overview

This course covers the Mark I & II subsea BOP control system, discussing how the control system functions and communicates from an electrical perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians and subsea engineers).

COURSE OUTLINE

- Pretest and welcome
- Drilling overview
- Control panel operation
- Documentation
- Electrical symbols
- Power flow
- Signal flow

- Fluid flow overview
- Surface electrical equipment
- Subsea electronics module (SEM)
- Pressure balanced oil filled (PBOF) cables
- Emergency control systems
- Post-test and evaluations

Mark I and II Subsea BOP Control System — Hydraulic

Five-day course description

Overview

This course covers the Mark I & II subsea BOP control systems, discussing how the control systems function and communicate from a hydraulic perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic technicians and subsea engineers).

- Pretest and welcome
- Drilling overview
- Control panel operation
- Documentation
- Hydraulic symbols
- Valves and regulators
- Fluid flow overview

- Power and communications
- Pressure balanced oil filled (PBOF) cables
- Surface hydraulic equipment
- Subsea hydraulic equipment
- Emergency control systems
- General maintenance
- Post-test and evaluations

Mark I and II Subsea BOP Control System — Multi-Discipline

Five-day course description

Overview

This course covers the Mark I & II subsea BOP control systems, discussing how the control systems function and communicate from a electric and hydraulic perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic technicians, electrical technicians, and subsea engineers)

COURSE OUTLINE

- Pretest and welcome
- Drilling overview
- Control panel operation
- Documentation
- Hydraulic symbols
- Valves and regulators
- Fluid flow overview

- Power and communications
- Surface controls
- Subsea electronics module (SEM)
- Subsea hydraulic equipment
- Emergency control systems
- General maintenance
- Post-test and evaluations

Land BOP Control Systems

Three-day course description

Overview

This course covers Cameron land systems (U BOP, FLS gate valve, and land BOP control systems), discussing equipment operations, testing, assembly, and disassembly procedures.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical, hydraulic, and mechanical technicians).

- Pretest and welcome
- U BOP
- FFLS API 6A slab-style gate valve
- DL annular BOP
- Control system documentation
- Electrical symbols

- Hydraulic symbols
- Control unit overview
- Control panels
- Power and signal
- Maintenance, recommended practices, and troubleshooting
- Post-test and evaluations

Jack-up BOP Control Systems

Three-day course description

Overview

This course covers Cameron land systems (U BOP, FLS gate valve, and closing units), discussing equipment operations, testing, assembly, and disassembly procedures.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical, hydraulic, and mechanical technicians).

COURSE OUTLINE

- Pretest and welcome
- U BOP
- FFLS API 6A slab-style gate valve
- DL annular BOP
- Control system documentation
- Electrical symbols

- Hydraulic symbols
- Control unit overview
- Control panels
- Power and signal
- Maintenance, recommended practices, and troubleshooting
- Post-test and evaluations

Direct Hydraulic BOP Control System

Four-day course description

Overview

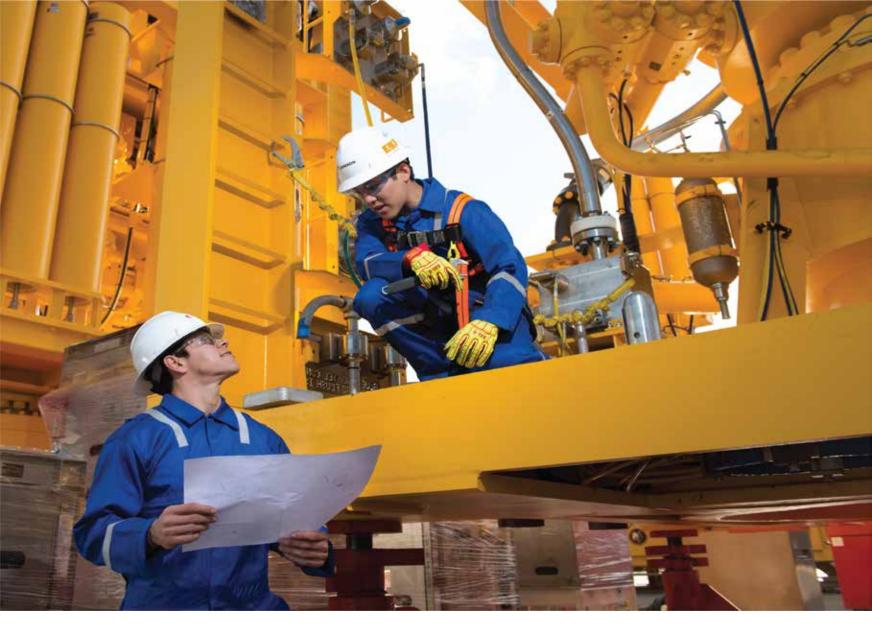
This course covers the direct hydraulic modular BOP control system, discussing how the control system functions and communicates from both an electrical and hydraulic perspective.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operations of the equipment (i.e. hydraulic technicians, electrical technicians, and subsea engineers).

- Pretest and welcome
- Drilling overview
- BOP control system software
- Documentation
- Valves and regulators
- Fluid flow overview

- Electrical symbols
- Power distribution
- Systems & communications
- Surface & subsea hydraulic equipment
- Emergency systems
- Post-test and evaluations



Cameron BOP Stacks

Three-day course description

Overview

This course covers Cameron BOP stacks, discussing equipment operations, testing, assembly, and disassembly procedures.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. mechanical technicians, hydraulic technicians, and subsea engineers).

- Pretest and welcome
- BOP documentation
- U* onshore ram-type BOP
- FLS* API 6A slab-style gate valve for extreme sour and subsea applications
- DL* high-pressure annular BOP
- Subsea BOP stack introduction
- TL* offshore ram-type BOP operations
- TL offshore ram-type BOP ram change
- ST-Lock operation

- Ramlock operation
- TL offshore ram-type BOP maintenance
- EVO* compact, offshore ram-type BOP
- Ram change
- EVO BOP maintenance
- UII* subsea ram-type BOP operations
- Wedge lock operation
- LMRP and wellhead connectors
- MCS gate valve
- Post-test and evaluations

U Ram-Type BOP — Mechanical

One-day course description

Overview

This course covers Cameron land systems (U BOP, FLS gate valve, and closing units), discussing equipment operations, testing, assembly, and disassembly procedures.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical, hydraulic, and mechanical technicians).

COURSE OUTLINE

- Pretest and welcome
- U BOP
- FFLS API 6A slab-style gate valve
- DL annular BOP
- Control system documentation
- Electrical symbols

- Hydraulic symbols
- Control unit overview
- Control panels
- Power and signal
- Maintenance, recommended practices, and troubleshooting
- Post-test and evaluations

Townsend Ram-Type BOP — Mechanical

One-day course description

Overview

This course covers the Townsend product line, discussing equipment configuration, assembly, and maintenance procedures

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic and mechanical technicians).

- Pretest and welcome
- T-81 BOP
- T-82 BOP
- T-84 BOP
- T-90 BOP
- Post-test and evaluations

Choke & Kill Drilling Manifold — Mechanical

One-day course description

Overview

This mechanical course will focus on the key concepts and mechanics of the Cameron Choke & Kill Manifold and its equipment.

Students will gain an understanding of equipment operations, testing, and assembly procedures using Cameron best practices.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic and mechanical technicians).

COURSE OUTLINE

- Pretest and welcome
- Introduction to manifolds
- Choke control panel
- Drilling chokes
- F-series gate valves
- Post-test and evaluations

LoadKing Riser System - Mechanical

One-day course description

Overview

The Riser Systems course will be designed around the Cameron Load King Riser system.

The course will provide introductory knowledge into the purpose and function of the riser system, API requirements for riser systems, assembly/disassembly procedures, as well as operation and maintenance.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. hydraulic and mechanical technicians).

- Pretest and welcome
- Riser systems overview
- Telescoping joint and ring
- Diverter system
- Running the BOP
- Post-test and evaluations

Integrated Managed Pressure Drilling Control System — Multi-Discipline

Three-day course description

Overview

This multi-disciplined training course presents in-depth knowledge on the configuration, mechanics, and controls of the Deep water MPD Integrated Solution,

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, and subsea engineers)

- Pretest and welcome
- Introduction to MPD
- BTR RCD operations
- Documentation
- Integrated riser joint
- Slimline annular
- MPD control system software

- Surface equipment
- Hydraulic symbols
- Fluid flow overview
- Electric symbols
- Power & signal distribution
- Post-test and evaluations



RIG EQUIPMENT

Operator Course

Overview

This course presents the construction, overall system understanding, and purpose of the Cameron rig equipment deliverable. The content delves into how to safely and efficiently operate the equipment as well as perform the necessary maintenance and inspections.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment.

COURSE OUTLINE

- Pretest and welcome
- Describe the product, it's usage and interactions
- Locating useful and necessary information in the User Manual and documentation
- Main systems of the product (mechanical, hydraulic, electric and control system)
- Sub systems of the product (structural, hydraulic and control system)
- Safety hazards related to the equipment
- Normal start / stop procedures
- Set-up preferences & automated sequences
- Emergency procedures and systems
- Safe and effective operation of equipment
- Navigate through necessary screens on the HMI
- Running normal sequences and operation modes
- Know what to do when getting an alarm
- Safety hazards during maintenance
- Operator maintenance & inspections
- Post-test

Simulator Course

Overview

This course focuses on the safe and effective operation of machinery in the product delivery. Instruction is centered around the XCOM simulator to recreate real life scenarios which will reduce operator error.

This course can be also used as a refresher for personnel already working with the equipment.

Who should attend?

The Operator course is a prerequisite to this course so each student has a solid foundation of theoretical understanding on system functionality and machinery operations.

- Pretest and welcome
- Describe the product, its usage and interactions
- Main systems of the product (mechanical, hydraulic, electric and control system)
- Sub systems of the product (structural, hydraulic and control system)
- Safety hazards related to the equipment
- Normal start / stop procedures
- Set-up preferences & automated sequences
- Emergency procedures and systems
- Safe and effective operation of equipment
- Navigate through necessary screens on the HMI
- Running normal sequences and operation modes (automatic and manual modes)
- Know what to do when getting an alarm
- Post-test

Basic OnTrack PLC 1.0 or 2.0

Overview

This course presents the Siemens PLC arrangement featured in the Cameron scope, with focus on arrangement and functionality. The participants are introduced to basic programing languages of the PLC with use of the Function Block Diagram (FBD) language.

This is a practical based course with short theoretical presentations included. Work tasks will be performed on PLC training stations and handouts. This course is conducted in Kristiansand, Norway.

Who should attend?

Personnel who will perform the electrical maintenance and repair of the equipment as well as personnel designated to oversee and supervise electrical maintenance of the equipment.

A fundamental electrical knowledge is recommended to attend this course. For the best learning experience, it is helpful for the participants' rig to include the OnTrack remote help solution.

**Maximum capacity of 6 participants

COURSE OUTLINE

- Pretest and welcome
- Introduction to PLC functional design
- Identify the different Siemens modules used in the OnTrack PLC rack
- Module communication
- Replacement and set-up of modules
- Common data types
- Simatic step 7 program structure/ TIA Portal (2.0)
- Common programming blocks functions
- Program lab exercises to control machines in a simple manner
- Locating specific signals in Cameron data blocks
- Basic PLC Troubleshooting
- Post-test

Advanced OnTrack PLC 1.0 or 2.0

Overview

This practical-based course delivers comprehensive information on the Cameron software residing within a Siemens PLC. The content explores program navigation and signal tracing as well as troubleshooting practices.

This course is conducted in Kristiansand, Norway.

Who should attend?

The Basic OnTrack PLC course is a prerequisite to this course so each student has a solid foundation of theoretical understanding on software functionality. The establishment of fundamental electrical knowledge is recommended before attending this course.

For the best learning experience, it is helpful for the participants' rig to include the OnTrack remote help solution.

**Maximum capacity of 6 participants

- Pretest and welcome
- PLC communication via hardwired, over DP-net and with other PLCs over an Ethernet.
- Simatic Step 7 program structure/ TIA Portal (2.0)
- PLC program Execution
- Cameron call structure for machines
- Common Cameron blocks function
- Trace signals to perform troubleshooting
- Post-test

Electro-Technical

Overview

This course presents the construction, overall system understanding, and purpose of the Cameron rig equipment deliverable. The content delves into electrical system of the machines and troubleshooting techniques.

Who should attend?

Personnel that will perform electrical maintenance and repair of the equipment as well as personnel designated to oversee or supervise electrical maintenance of the equipment.

The establishment of electrical knowledge is recommended before attending this course as well as basic PLC knowledge.

COURSE OUTLINE

- Pretest and welcome
- Safety hazards related to the equipment
- Product usage and interactions
- Electrical cabinet arrangement
- Sensors and actuators
- Start, stop and emergency procedures
- Cameron recommended maintenance procedures
- Guideline for troubleshooting on sensors and actuators
- Relevant PLC troubleshooting applications
- Replacement and set up of sensors, actuators and PLC modules
- Post-test

Hydraulic-Mechanical Maintenance

Overview

Participants in the course shall gain knowledge about the construction, overall system understanding and purpose of the Cameron rig equipment scope.

During the course, the participants will gain an understanding of how to operate the equipment in order to perform maintenance, repairs, inspections and troubleshooting.

Who should attend?

Personnel that will perform hydraulic mechanical maintenance on the equipment or personnel designated to oversee or supervise maintenance of the equipment.

Before participating in this course, each student should have basic product knowledge as well as an understanding of hydraulics.

- Pretest and welcome
- Describe the product, usage and interactions
- Navigating User Manuals and associated documentation
- Main systems of the product (mechanical, hydraulic, electric and control system)
- Sub systems of the product (structural, hydraulic and control system)
- Safety hazards related to the equipment
- Normal start / stop procedure
- Emergency procedures and systems on the product
- Safety issues related to the maintenance of the equipment
- Operator maintenance & inspections
- Troubleshooting practices
- Post-test

JiM 10 Advanced Practical Troubleshooting

Three-day course description

Overview

This course delivers a detailed scope of troubleshooting at an advanced level in a blended learning approach. Through classroom lectures and practical exercises, the participants

build insight on fault finding techniques to reduce downtime and determine which discipline is responsible for each job.

This course is conducted in Kristiansand, Norway.

Who should attend?

Personnel that will troubleshoot the equipment and personnel designated to oversee or supervise repair of the JiM 10.

Before participating in this course, each student should have proficient knowledge and/or broad experience in working on the machine. The course assumes that the participant has advanced hydraulic, electric and mechanical knowledge.

**Maximum capacity of 4 participants

COURSE OUTLINE

- Pretest and welcome
- JiM 10 System Understanding
- Component interaction
- Testing power, speed, and direction
- Control of components
- Normal modes of operation
- Locating root problems
- Reviewing known issues
- Post-test

Advanced Electro-Technician Practical

Three-day course description

Overview

This course focuses on the maintenance, troubleshooting, and electro-technical repairs on the JiM 10 models through theoretical and practical delivery.

This course is conducted in Kristiansand, Norway.

Who should attend?

Electro Technical personnel that will maintain and troubleshoot the electrical equipment or personnel designated to oversee or supervise maintenance of the electrical equipment.

Before participating in this course, each student should have basic product knowledge as well as basic electro-technical knowledge.

**Maximum capacity of 4 participants

- Pretest and welcome
- Main components and functionality
- Electrical components, typical errors and how to replace and set them up
- Modes, interlocks, alarms and responses
- Machine operations, typical errors and how to recognize them
- How to separate operational errors from equipment errors
- How to separate electrical/software errors from hyd/mech errors
- How to use the PLC for troubleshooting
- Solve a variety of relevant errors by making use of troubleshooting
- and knowledge on how to replace and set up electrical components.
- Post-test

Advanced Hyd/Mech Technician Practical

Three-day course description

Overview

This course focuses on the maintenance, troubleshooting, and hyd/mech technical repairs on the JiM 10 models through theoretical and practical delivery.

The course will encompass a thorough review of the most important mechanical and hydraulic components structure and function, interaction within the mechanical and hydraulic system as well as the symbols and flow diagrams in accordance to the ISO 1219-1 standard.

Who should attend?

Personnel that will maintain and troubleshoot the equipment and personnel designated to oversee or supervise maintenance of the equipment.

Before participating in this course, each student should have basic product knowledge as well as basic hydraulic and mechanical knowledge.

**Maximum capacity of 4 participants

COURSE OUTLINE

- Pretest and welcome
- Basic hydraulic and mechanical principles
- Identifying components and their functionality
- Hydraulic and mechanical system understanding
- Hydraulic and mechanical component interactions
- Controlling power, speed, and direction
- Interacting with the drive ring, make up tong, and brake out tong
- Post-test

On-site Practical Course

Overview

This purely hands-on course is intended for maintenance personnel on installations in operation. It provides useful information regarding safe and effective operation and maintenance procedures regarding safe and effective operation and maintenance procedures.

A skilled instructor or service engineer visits the rig and spends time with the maintenance personnel during operation.

This course can be either electro or hydraulic/mechanic focused and can be also used as a refresher for personnel already working with the equipment.

Who should attend?

Personnel that will maintain the equipment or personnel designated to oversee or supervise maintenance of the equipment.

A basic product and discipline knowledge is recommended before attending this course.

- Pretest and welcome
- Equipment familiarization prior to entering rig operation
- Define various modes, interlocks, alarms, responses
- HSE Procedures
- Learn critical and rarely faced situations (manual modes, BOP disconnect, shut down, kick)
- Maximize equipment performance
- PLC software verification
- Post-test

Basic ServiceLab

One-day course description

Overview

This practical course presents in-depth knowledge on how to use ServiceLab for monitoring and logging data from a wide range of Cameron equipment, and for troubleshooting purposes.

Who should attend?

The Basic OnTrack PLC course is a prerequisite to this course so each student has a solid foundation of theoretical understanding on software functionality. The establishment of fundamental electrical knowledge is recommended before attending this course.

For the best learning experience, it is helpful for the participants' rig to include the OnTrack remote help solution.

**Maximum capacity of 6 participants

COURSE OUTLINE

- Pretest and welcome
- Signal location
- Setting up a simple ServiceLab log.
- Utilize different trigger tools for troubleshooting purposes
- Saving and opening logs
- Post-test

eLearning Solutions

Web based training

Overview

Cameron E-Learning modules are designed to give the participant a general introduction into the machinery or process. Modules explain how the machine or process functions on a basic level. Interactive quizzes throughout the modules will engage the user and strengthen the learner's knowledge.

Advantages

Self-paced - Participants can take modules when it suits them

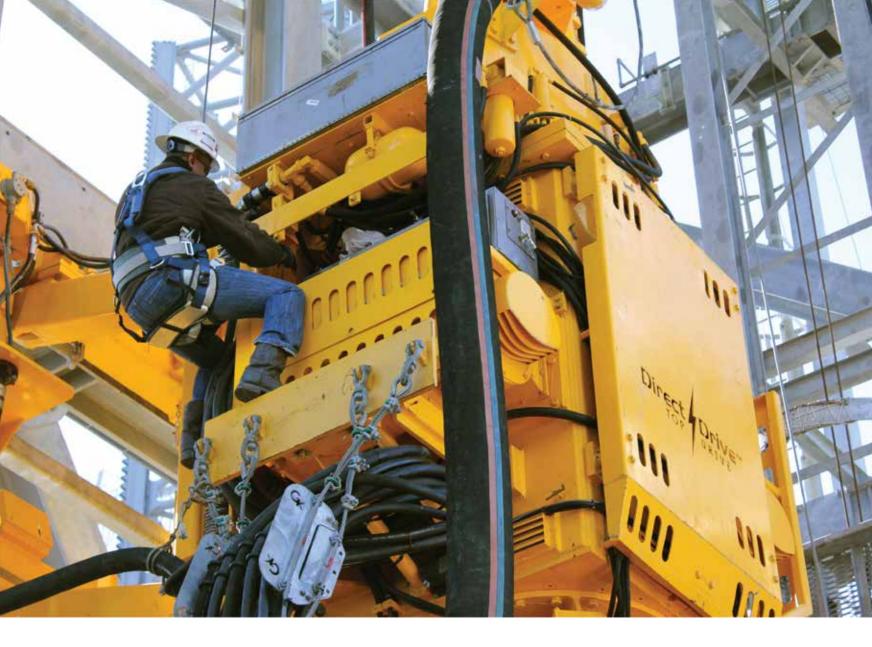
Flexible - Participants can learn wherever they wish.

Pedagogic - Courses are made with a pedagogic plan with the end user always in perspective.

Interactive - Interactivity as well as 3D models, images and video content are used to engage the participant.

COURSE MODULES

- X-COMTM/ OnTrack*
- Top Drive
- SmartRacker*
- JiM 10 Hydraulic Roughneck
- JiM 20 Hydraulic Roughneck
- Drawworks
- Catwalk Machine
- HPU (Hydraulic Power Unit)
- BOP Handling Equipment for Jack-ups
- Basic Hydraulics



DirectDrive* 750 Ton Top Drive

Two-day course description

Overview

This course focuses on the operation and configuration of the Cameron TD 750 top drive.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, drillers, assistant drillers, tool-pushers, andassistant tool-pushers).

- Pretest and welcome
- Top drive overview
- Power and communications
- Hydraulic fluid flow

- Maintenance
- Operation system control
- Software
- Post-test and evaluations

LDW Gear Driven Drawworks

Two-day course description

Overview

This course focuses on the operation and configuration of the LDW* AC gear-driven drawworks.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, drillers, assistant drillers, tool-pushers, andassistant tool-pushers).

COURSE OUTLINE

- Pretest and welcome
- Overview
- Major assemblies
- Lubrication system
- System control

- Braking system
- Auxiliary braking system
- Maintenance
- Post-test and evaluations

LDW Chain Driven Drawworks

Two-day course description

Overview

This course presents in-depth knowledge on the configuration, mechanics, and controls of the heavy duty chain driven LDW 3000* and LDW 4500* drawworks models.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, drillers, assistant drillers, tool-pushers, andassistant tool-pushers).

- Pretest and welcome
- Overview
- Transmission
- Braking Systems

- Lubrication system
- Operation
- Maintenance
- Post-test and evaluations

Mud Pumps

Two-day course description

Overview

This course focuses on the operation and configuration of the AC motor driven W-Series* offshore and WH-Series* onshore mud pumps.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, drillers, assistant drillers, tool-pushers, andassistant tool-pushers).

COURSE OUTLINE

- Pretest and welcome
- Overview
- Power end
- Fluid end

- Lubrication system
- Software
- Maintenance
- Post-test and evaluations

Digital Drilling Control System

Four-day course description

Overview

This course focuses on the operation and configuration of the Cameron digital drilling control system (DDCS) and driller's chair.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. drillers, assistant drillers, tool-pushers, andassistant tool-pushers).

- Pretest and welcome
- System configuration
- Initial screens
- Drill screen
- Driller's control console (DCC) screen
- Top drive screen

- Trending screen
- Alarms and faults
- Calibration screen
- Rig communications
- Post-test and evaluations

Rotary Table

One-day course description

Overview

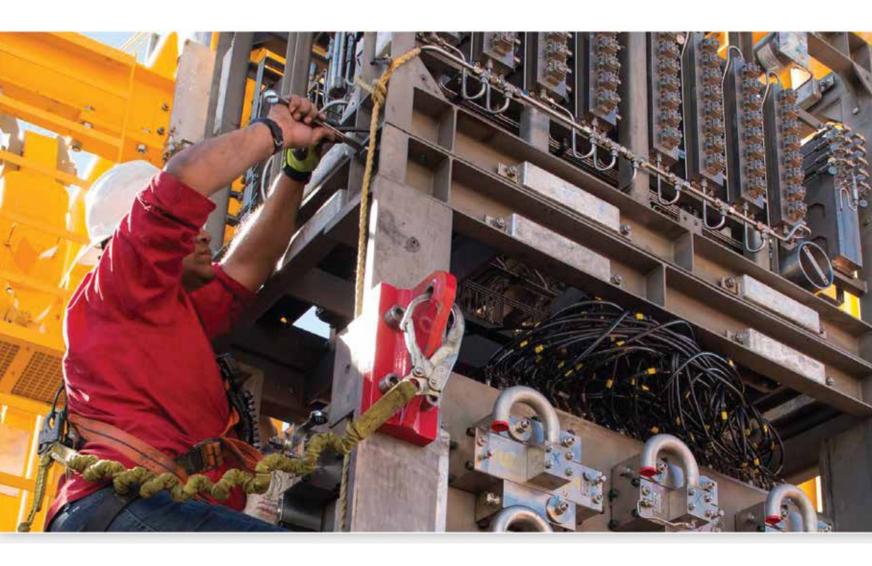
This course focuses on the operation and configuration of the AC motor driven LRT Rotary Table series. It give student an in-depth view of the Rotary Table gear set and lubrication system in addition to common maintenance procedures.

Who should attend?

Personnel who will operate the equipment or personnel designated to oversee operation of the equipment (i.e. electrical technicians, hydraulic technicians, drillers, assistant drillers, tool-pushers, and assistant tool-pushers).

- Pretest and welcome
- Overview
- Arrangement and functionality
- Lubrication System

- Operations
- Maintenance
- Post-test and evaluations



Drilling Systems Training 4601 Westway Park Blvd Houston, Texas 77041

drillingtraining@slb.com products.slb.com

